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## Serie Research Memoranda

### Toward a Network of Regions: The United States of Europe

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### Abstract

Starting from the changing role of governments in planning (physical, environmental, economic etc.), this paper calls attention to the drastic structural changes taking place in the regional scene after the transition towards market orientation and global competitiveness. The main focus is on European developments. In addition to economic forces, two phenomena will be highlighted, viz. the transition towards a network economy and the profound technological changes taking place at the regional and urban level. Particular attention will be devoted to European spatial dynamics in a networked society. Various new geographical configurations and maps of Europe will be shown, followed by some exploratory remarks on future trends. The paper will conclude with some policy conclusions.



## 1. The Changing Nature of Regional Planning

It does not need much argumentation that the role and substance of urban and regional planning have increasingly come under severe pressure. The indigenous features of planning as a discipline with a distinct normative character are rapidly changing, mainly as a response to profound changes in the context and environment of planning in many countries of our world. This is clearly witnessed by the following quotation (see Bolan 1991, p.7):

*"Planning today faces a challenging new puzzle. On the one hand, the experiments of Communist central planning have failed. The bloc of Central and Eastern European countries are rejecting central command planning and seeking to decentralize governance and move to free market economies. On the surface at least, there appears to be a distinctive failure of collective planning. On the other hand, the past two decades have seen Japan, other Pacific rim nations, and Western Europe become major industrial states with the help of strong public and private planning mechanisms".*

It is noteworthy that the massive changes taking place in East Europe nowadays provoke major revisions for the scope and range of planning at all levels, ranging from local to supra-national. An important role in the discussion on role changes in planning was played by Fukuyama (1989, 1992). From his 1989 article 'The End of History?' we quote the following concluding statements (p.18):

*"The passing of Marxism-Leninism first from China and then from the Soviet Union will mean its death as a living ideology of world historical significance. For while there may be some isolated true believers left in places like Managua, Pyongyang, or Cambridge, Massachusetts, the fact that there is not a single large state in which it is a going concern undermines completely its pretensions to being in the vanguard of human history. And the death of this ideology means the growing "Common Marketization" of international relations, and the diminution of the likelihood of large-scale conflict between states.*

*The end of history will be a very sad time. The struggle for recognition, the willingness to risk one's life for a purely abstract goal, the worldwide ideological struggle that called forth daring, courage, imagination, and idealism, will be replaced by economic calculation, the endless solving of technical problems, environmental concerns, and the satisfaction of sophisticated consumer demands. In the post-historical period there will be neither art nor philosophy, just the perpetual caretaking of the museum of human history".*

The above citations illustrate a clear message: we are moving towards a new planning culture and style, in which even the question is raised whether there is a case for planning at all. The increased market orientation of almost all countries questions the position of the public sector in almost all countries: deregulation, decentralisation and privatisation have become the key words in a new planning orientation which can be summarized by the generic term devolution (see also Van Gent and Nijkamp 1991).

The devolution process - which implies a delegation of social and economic responsibilities to lower-order public institutions or to private (or semi-private) market parties - serves of course economic objectives, such as reduction of public budget deficits, increase of competitiveness of regions or cities, or more flexibility at the local level. Economic restructuring - accompanied by technological progress - has become a focal point of policy attention (both private and public) in many countries. However, the drastic socio-economic and socio-political changes which have flooded many countries in the past years have provoked many debates on the geographical - political mapping of such changes. Especially in Europe we observe a trend toward a 'Europe of the

regions' rather than a single multinational European state. A recent map on 'the United States of Europe' may clarify this point (see Figure 1), where especially historical and cultural factors are used to draw up a new European map with a sense of cultural and political identity



Figure 1. The United States of Europe

Source: Amsterdams Historisch Genootschap, Amsterdam (1992)

The long history of Europe is essentially based on a close connection between economic growth and development of transport logistics. Europe is nowadays rapidly moving towards an integrated network economy. Especially after the completion of the European market (1993) and the expected integration of (parts of) Eastern Europe, a new map of Europe will emerge, which will show Europe as an interwoven multi-layer and multi-faceted network. It therefore is no surprise that politically independent countries such as Sweden and Austria aim at building stronger economic links with Western Europe. An increasing concern is also voiced on the barriers in Europe caused by missing links or even missing networks (see Round Table of European Industrialists, 1991).

Economic dynamics has always been accompanied by spatial dynamics: economic heartlands come and go. The economic history of mankind shows many fluctuations in the functioning of major economic power blocks. For example, the dominant position of Western Europe is in fact fairly recent. But also within Western Europe remarkable shifts can be observed in the past centuries, for instance, from Italy to the Iberian Peninsula and next to North-West Europe. Especially after the Industrial Revolution major changes have taken place in Europe, in which - besides geographical shifts of economic core areas - also drastic (inter)sectoral shifts could be observed.

The emergence of the new European network economy in recent years has generated a broad interest in advanced transport systems of a trans-border nature. The quality of transport systems is of decisive importance for economic development, in both the developed and the developing regions of Europe. A recognition of the critical role of transport can already be found in the Treaty of Rome, which heralded the birth of the European Community. In a broader context, some authors (e.g., Andersson and Strömquist, 1988) have even argued that the economic history of Europe can be characterized by four major transport and logistic revolutions:

- the period from the thirteenth century onward; waterways (rivers and coasts) emerged as new transport media, connecting cities along rivers and coastal areas, like Lübeck and Venice (the so-called Hanseatic period). In Northern Europe this development was favoured by the foundation of the Hanseatic League. In the Mediterranean Basin especially Venice benefitted from a vast network of trade relations including (indirect) connections to the Far East.
- the period from the seventeenth century onward, characterized by a drastic improvement in sailing and sea transport systems and by the introduction of new banking systems, through which trade to the Mediterranean, the Baltic region, the East Indies and the West Indies was stimulated, in particular in Western Europe where cities like London and Amsterdam became the new centres of world trade (the so-called Golden Age period).
- the period of the Industrial Revolution, in which the invention of the steam engine generated new transport modes (sea transport, railways) which also created new markets (e.g., North- and Central America, the Far East).
- the period from 1970's onward, which is marked by intensive information exchange and flexibilization; in this framework JIT (just-in-time) systems, telematics, integral logistics and MRP (material requirements planning) emerged as prominent features of the information society (see Giaoutzi and Nijkamp, 1988).

The old world has, in recent years, shown surprising signs of economic and political revitalisation. After several decades of desperate struggling for economic and



political unification among the countries of the European Community, suddenly and without too thorough reflection the tide has changed (see Nijkamp, 1991). The magical year 1992 has been accepted throughout Europe as a decisive historical landmark in the evolution of Europe toward international competitiveness, economic and technological leadership at a global level, and internal cohesiveness and cooperation. The choice of the year 1992, made a few years back and meant to be a transition to a new future for Europe was already in itself a remarkable example of clever psychological-political insight: a period of 4 to 5 years is long enough to allow for economic and political adjustments and short enough to call for concrete actions. It should be added as well, however, that the decision for one European market as of the beginning of the nineties has not been so much the cause of the recent avalanche of transnational orientation in Europe, but rather the consequence of many deeply rooted economic and technological developments in the European countries after the recession period in the beginning of the eighties. It was increasingly recognized that a unification of the European economies is a necessary condition for economic survival of Europe in the medium and long term, and this awareness has only had political sanctification by giving it a special blessing in the form of the magical year 1992 as the starting point of a new era. The above remarks however, do not deny that political cohesiveness is a necessity, but economic forces seem to exert a strong impact. A drive towards a 'Europe of regions' based on political ideals does not seem to generate much public support, as recent referendums in Europe have shown. The new European regions have apparently a strong desire for cultural and social identity.

## 2. The European Network Scene

The world economy is in full dynamics, especially in recent years. Traditional patterns of competition - within national borders - are being increasingly replaced by vigorous competition on a multi-national and even worldwide scale. "Intra-country" competition is being replaced by "inter-trade-block" competition, since traditional boundaries disappear; this takes place in Europe and will take place in other parts of the world as well. Countries within such trade-blocks are becoming part of an economic network. To maximize the competitiveness of such a network, and thereby maximize its socio-economic potential and performance, the quality of its infrastructure is of critical importance, as transport has become an important component of modern production processes, among others because of intensified division of tasks between firms (in different countries). Thus international connectivity is a critical factor. It seems realistic to assume that Europe is moving towards a network of regions (see Nijkamp and Perrels, 1992).

Because of this globalization and other factors (including the need for higher and sustained economic growth), transportation in Europe has grown enormously, especially in recent years. As the supply of infrastructure - for various reasons - followed this trend only in part, existing infrastructure bottlenecks have been accentuated. This is a very serious problem, since economic development and infrastructural development have always been strongly interlinked, as is shown by hundreds of years of European history. The full benefits of the foreseen Internal European Market will only be reaped in case of effective (physical and non-physical) infrastructural adjustments in Europe. What is needed in this context, is European - and **not** national - thinking and action in

infrastructural policy, based on knowledge of past successes and failures in infrastructural planning and of the future needs of the economy, the people living in Europe and their (increasingly threatened) (natural) environment.

The role of transport and communication networks for spatial development in Europe is rapidly changing. Not many years ago it was possible to argue that - due to underpriced energy and the ubiquity of the road network - accessibility was losing its importance for the organisation of space. Today a number of developments work in the opposite direction, i.e. enhance the key function of transport and communications networks for spatial development:

- New, faster transport networks (high-speed rail and air) superimpose new, higher levels of infrastructure on top of the existing hierarchy of transport networks and create new spatial concentrations of accessibility.
- Strategic megaprojects such as the Channel Tunnel, the fixed links across the Belt and Sund, the transalpine base tunnels and the conversion of the Iberian mainlines to standard gauges will create the single biggest unified rail network in the world.
- Despite the reintegration of the eastern Europe into the European transport network, the difference in accessibility between West and East will for many years remain large.
- New high-speed, high capacity telecommunication networks such as ISDN and satellite communication complement existing communication networks and create areas of high informational accessibility at nodal centres.

The supply-side developments have spawned an unprecedented growth in the demand for international, interregional and intra-regional goods transport, passenger travel and information exchange, led to the globalisation and internationalisation of economic processes and increased the dependency of regions and cities on access to transport and information networks. Some see this as a phase transition in the organisation of space, from a space of locations to a 'space of flows'.

The qualitative changes in the relationship between networks and locations have posed a rich set of analytically challenging and policy-relevant research questions at all spatial levels. Recently, the interaction between networks and spatial development has attracted the attention of regional scientists, geographers, transportation scientists, economists and planners in many European countries. From a policy point of view, the role of networks for spatial development has become central for transport and telecommunications policy of the Europe Community at a time when new highspeed rail, motorway and advanced telecommunication networks are about to fundamentally transform the map of Europe. In addition, the unconstrained tendency to ever more transport and mobility causes serious social and environmental imbalances so that the identification of feasible policies to curb this trend is a highly desirable goal.

Unfortunately, interest in the European scale of networks has until recently not yet been very significant, as transport policy and planning is seldom performed at this scale. National frontiers have always provided a clear physical barrier between countries despite growing transport demand. Intra-European transport infrastructure networks have not followed this trend and show nowadays various bottlenecks in terms of missing links and missing networks. The emerging Internal Market between the twelve members of the European Community has put the focus of European politicians and industry on issues of socio-economic harmonization in order to remove distortions to free competition between industries in its member states, and as a result increasing consideration is now

given to transportation.

However, despite the growing attention of researchers and policy makers to the role of networks for spatial development, many questions remain unsolved. For instance, the impacts of the new multi-level networks on regional economic development and interregional migration as well as on intra-urban location of firms and households are still empirically uncertain and theoretically poorly understood. The same holds for the position of former border areas which now tend to receive a new potential as gatekeepers. Unfortunately, the research in different European countries is often fragmented and lacks exchange with researchers working on similar topics in other countries.

In recent years a series of drastic changes can be observed in Europe's transport and communications. At the same time the fear is growing that our current networks are far from satisfactory in fulfilling the needs for the European infrastructure. Such changes concern **commodity** transport, **passenger** transport and **services/information** transport.

Far reaching changes in **commodity** transport include:

- the trend towards high value and low weight commodities (**dematerialization**), requiring flexible and varied transport modes.
- the tendency to produce more tailor-made goods in more diverse and smaller product series (**customization**), leading to a decrease in the role of bulk transport.
- an increasingly important role of new information technology and (both internal and external) logistics management (**informatization**), which places more emphasis on the coordination of physical transport (e.g., door-to-door transport).
- a world-wide orientation of modern transport, accompanied by the emergence of transnational transport companies (**globalization**), which also generates many new international trade patterns.
- the rise of combined transport of previously competitive modes (**integration**), leading to new demands for transshipment facilities (e.g., road-rail or road-air).

In the area of **passenger** transport various megatrends are arising:

- a reduction in the growth of population (the '**grey revolution**'), leading to an aging society with much leisure time and hence a high geographical mobility.
- a tendency towards more, but smaller and alternative types of households (**individualization**), creating an additional demand for more mobility.
- an (expected) trend of gradually rising income levels per capita, accompanied by a higher female labour force participation and flexible working hours (the '**new economic progress**'), leading to a rise in car ownership and car use (for both business and personal purposes).
- an ongoing rise in commuting distance and in urban sprawl (**suburbanization**), implying a rapid rise in motorization of our society.

Finally, important developments in the field of **information/services** include the following:

- a trend toward integral logistic systems (the '**fourth logistic revolution**'), leading to the need for just-in-time (JIT) concepts, an increase in delivery frequencies and an increase in road haulage (based e.g. on preprogrammed routing and logistic platforms).
- an increasingly important role of telecommunication and information in transport

(telematics), leading to an intensification of physical and human interactions in space (telematics may act as both a generator of and a substitute for physical transport).

Economic development and infrastructure development go apparently hand in hand. Therefore, the European economy will remain critically dependent on well functioning networks as catalysts for future development. There is nowadays however a growing awareness that the current European infrastructure network is becoming outdated, without being replaced by modern facilities which would position the European economies at a competitive edge. Missing networks emerge because transportation systems are developed in a segmented way, each country seeking for its own solution for each transport mode without keeping an eye on the synergetic effects of a coordinated design and use of advanced infrastructures. Another reason for missing networks is the focus on hard ware and the neglect of soft ware and organizational aspects as well as financial and ecological implications. Cabotage, protection of national carriers, segmented European railway companies, and lack of multi-modal transport strategies are but a few examples of the emergence of missing networks. A European orientation of all transport modes is necessary to cope with the current problems of missing and competing networks.

The conclusion which can be drawn from the above trends is evident: transport and communications become more intensive, not only locally/regionally, but also internationally. The potential offered by modern information technology and logistic systems will lead to a re-orientation of conventional transport systems. The need for reliability, flexibility and multi-modality in modern transport systems requires modern infrastructure networks. The presence of bottlenecks and missing networks in Europe is at odds with a balanced, competitive and sustainable European development after the economic integration.

The expected integration benefits will only come into being if Europe becomes an open and flexible network in which transport and communications infrastructure provides efficient connections between all regions and states in Europe. Consequently, the opportunity costs of missing networks are extremely high. There is much evidence from the literature that productive investments and social overhead investments (notably infrastructure investments) need each other to arrive at a balanced economic development of nations and regions. It seems thus plausible that the spin-off effects of new infrastructure investments - provided they are tailor-made with respect to local- and regional-economic needs - are significant. Transport and communications may thus provide a crucial stimulus for economic development (exchange of commodities, division of tasks, specialization etc.). According to the Cecchini Report any additional economic growth is critically dependent on the physical exchange capacity of Europe, i.e., on the performance of its connectivity infrastructure. Connectivity infrastructure (e.g., telecommunication, high speed trains) does not only generate direct benefits to all users, but induces also externalities in the form of additional benefits for users of (or subscribers to) network infrastructure (see Capello and Nijkamp, 1992). Such external benefits will be higher as more sophisticated technologies are used.

### 3. New Technology and Space

It has already been conjectured in the previous section that new technologies are critical for the performance of a network. Innovation and new technology have been focal points of economic research in the past decade. Neo-Schumpeterian paradigms have played a major role in the economic analysis of new technological regimes. A stage of an economic upswing is usually induced by the simultaneous development (and successful application) of several major technological breakthroughs in a limited number of sectors, which through process and product innovations lead to a rapid rise in productivity, efficiency and market coverage of firms. Such key sectors penetrate the whole economy, so that especially the intensity of diffusion of new technological findings is a critical variable (see Blaas and Nijkamp, 1992).

The 'new frontier' sectors are not randomly distributed over all nations or regions of an economic system, but are clustered in space and time. They are in particular concentrated in those regions which offer favourable seedbed conditions for new and successful initiatives. Regions with an open attitude towards new developments, with an economic multifunctionality with favourable communication networks and with sufficient flexibility in politics and organisational networks tend to become the winners in this competitive game. In general, advanced regions appear to have better access to all such incubator conditions, and as a consequence regional dynamics and economic dynamics are often two sides of the same medal.

Clearly, there may be significant variation in the development of a regional system compared to that of the nation as a whole, as the seedbed conditions for new technologies show much difference. Consequently, different countries may exhibit large differences in regional transformation processes.

Thus, Schumpeterian waves of economic restructuring appear to discriminate among various regions or cities. In the past decade especially the information and communication sector is often regarded as the key sector in the so-called fifth Kondratieff wave. This sector comprises inter alia computers, electronic capital goods, telecommunications equipment, optical fibres, robotics, ceramics, data banks, information services, micro-electronics and biotechnology. The knowledge and information component appear to be extremely important in this new technology sector, and this has some authors led to the conviction, that so-called 3C+ regions (regions with creativity, competence and connectivity) are the most promising areas for spatial-economic dynamics. On the other hand, the losers in this game will be the 3C- regions which are characterized by congestion, criminality and closedness.

The creation of a 'new technology' niche in a region is often regarded as a guarantee for regional revitalisation. However, the regional innovation potential is a multi-faceted phenomenon which shows much variation, as is also witnessed by Silicon Valley, the Greater Boston area, the London-Bristol corridor, the Dutch Randstad, or the greater Barcelona area. Thus it is not possible to estimate a priori a survival rate or a success rate of innovative regions. Furthermore, such areas are very sensitive to economic business cycles, especially as far as the routine (often mass) production is concerned that is related to basic innovations.

For the development of innovative new technology firms the presence of network structures also functions as a seedbed condition. Technological development (or innovation) is nowadays increasingly regarded as a collective phenomenon of interaction

between a multitude of actors. Innovations become the product of a network of actors. In this context, we can distinguish physical networks and social-economic networks. The first refers to infrastructure and telecommunication networks and the latter to networks based on interrelations between different actors for different purposes (for example, because of the interchange of knowledge, goods and/or information). Of course these two kinds of networks cannot be seen as totally separated, because they are interdependent configurations of economic actors.

Like for any kind of economic activity, it is also for innovative technological activities important to have access to high quality infrastructure and telecommunication networks. These networks provide contact and communication possibilities between the various actors and are an important factor in the competitive position. In the near future all networks will play a critical role in the interchange of information, because the increasing importance of the service sector and the knowledge component in industrial products requires integrated network configurations. The latter is a specific characteristic for innovative technological activities: products in this field have a very high knowledge component. This knowledge component concerns not only scientific knowledge but also informal knowledge concerning product technology, materials used, successful product/market combinations etc. It goes without saying that also learning-by-doing and learning-by-using obtained by means of relationships with suppliers, consumers and even competitors are important in this respect.

Differences in relationships between economic actors in social-economic networks are an important factor in explaining the differences in the development of regions concerning specific sectors. The actors do not only pertain to various entrepreneurs in the production domain, but also to actors in an institutional setting (government institutions, unions etc.) and supporting services (financial institutions, marketing offices etc.). Specifically for innovative high technological activities it is important to have (more or less formal) relationships that lead to technological transformation and the diffusion of technological know-how. Knowledge networks play a crucial role in the success of technological innovation. Therefore, it is evident that high technological firms will locate in an infrastructure network of a high quality.

Up-to-date information - by using network relations - is also important for the sectors active in the high-tech area because of drastic fast changes in the market and the demand for customized products. In practice, this leads to network formations like combined research projects, combined knowledge enlistment etc. Innovative and technological activities cannot anymore only be explained by technology-push or demand-pull theories. These kinds of activities are increasingly the result of an active cooperation between multiple actors in the high-tech sector. The costly research and development activities are in many cases only possible when the different actors make use of synergetic effects. Besides, nowadays a technological innovation is most of the time a result of different small innovations.

Each actor in a social-economic network has his own set of other - more or less relevant - actors. The more important actors in his environment the higher the chance that he will be successful in his activities. When one is dealing with innovative high technological activities - with a high knowledge component - the sensitivity of distance to other actors is high. Therefore, it is for this kind of activities important to be settled within the nodal point of a specific network. Urban and regional centers function normally as nodal points for both the physical and social-economic networks in a hierarchical structure. The location of high-tech activities may be expected to be present in

these nodal points of a spatial network. However, since some years it seems that different urban centers can perform at the same level. This might lead to a multi-polar structure of urban and regional centers. Also it seems that the development of a network for new activities (for example, innovative activities) is much easier in an environment not dominated by an old structural network.

Finally, in Europe traditional patterns of completion - within national borders - are increasingly being replaced by vigorous competition on a multi-national scale, since traditional boundaries disappear. Regions of different countries are becoming part of a transnational economic network. These developments could lead to a tendency in which large metropolises are losing part of their innovative potential in favour of medium-sized cities. The network economies in the French regions Provence-Alpes-Côte-d'Azur en Languedoc Rousillon based on innovative small and medium-sized companies maintaining linkages among themselves and with large enterprises could function as example. Here various forms of expertise in collaborative networks transcend the older types of industrial strategy based on internal concentration. Besides these French regions the "Third Italy" is an example of a territorial network of small businesses maintaining more or less formal relations.

#### 4. New Maps of the 'Europe of the Regions'

Regional disparities in Europe are still enormous. In the case of the EC, Masser et al. (1990) report index figures for 1985. According to them, if the mean gross national product of Europe is taken as the reference index value (100), the figure for the richest region (Hamburg) is 218, while the poorest regions in Greece and Spain have an index value below 50 and some Portuguese regions one below 30. For the whole of Europe without Russia, the situation in terms of GNP per capita is given in Figure 2.

The dynamic regions can better be identified, if one considers growth and industrial structure across regions of all European nations. One such attempt has been made by the French national planning agency DATAR. They identified a highly developed area stretching from the South-East of England to the North of Italy and opposed to this European "banana" the sun belt area on the French and Catalanian Mediterranean coast (see Figure 3).

This scenario can certainly be heavily criticized, mainly as being rather conservative. But it is no doubt developed on the base of present day economic realities. While the relevance of the spatial visions presented is difficult to establish, there is no doubt that transport and communication policy in Europe will be a relevant factor in this process. In contrast to the European banana and sunbelt model, there is also a growing awareness that the future map of Europe might consist of a large set of competitive urban agglomerations, forming the nodes of the European network economy (see Maggi and Nijkamp, 1992).

Others hypothesize that most regions outside the Banana will have development problems because they diagnose an increasing concentration of high technology industries, service sector activities and the necessary infrastructure investment in these regions. While the relevance of these alternative hypotheses cannot be demonstrated here, there is no doubt that the banana shaped area is reflecting an economic reality. Figure 4 presents a map of the export figures of country in Europe, where only the most

important streams are indicated. The same North-East to South West pattern emerges here.

Recently, with the opening of Middle and Eastern Europe, people have started to consider the European economic development on an even larger scale and with a time horizon stretching far into the next century. An example is given in the map in Figure 5 presented by Lutzky (1990). This author divides the European "house" into 7 "appartments".

The first area is baptised "Mediterranean Sunbelt" and stretches from Istanbul to Lisbon. It is seen as an agrarian and tourist region and a work-bank for the high technology European center. Besides that, this area has its importance in the harbours and its links with Africa and the Middle-East. The second "apartment" is termed "Technology Network West" and reproduces the "Banana" extending it to Scotland and Ireland in the West and Trieste in the south-East. The European center contains the high technology industries, the service sector and research and development centers. Apartments 3 and 4 are the "North-Sea Partners" and the "Baltic Hanse". They are characterised by sea-related activities like harbours, ship-building and the production and refinement of energy. The "Middle-European Capitals" are seen as a future center for administrative activities, research and development in the social sciences, trade and heavy industry. While the "apartment 6", "East-Slavian Federation", will mainly be producing primary material and agricultural products, the "Balcan Take-off" area is seen to have an importance in the production and distribution of food and household-goods.

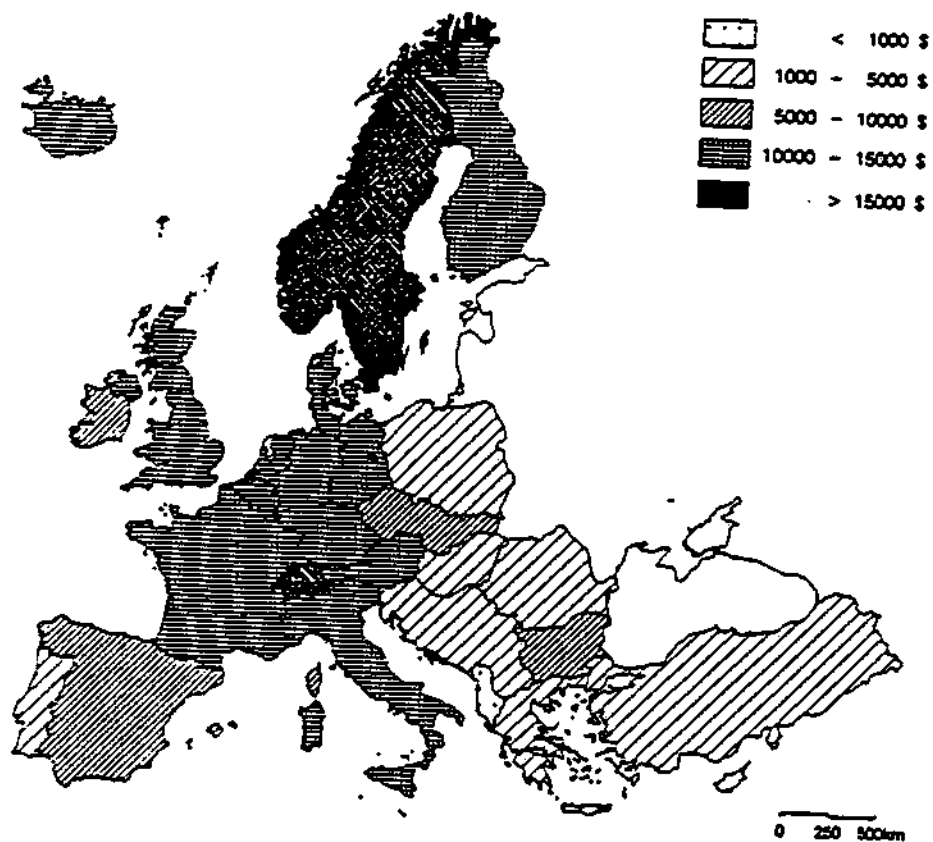
The division of labour will produce wealth differences according to the productivity of the sectors and activities located in specific micro-regions. The wealthier states in Europe, and the EC too, have become used to correct the market distribution of income through heavy subsidies - most obviously in the case of the agricultural sector. If one foresees a division of tasks along the lines presented above, this will also have implications in terms of distribution of income. This will be an easier task in the rich countries than in the others. Hence, it might come out that the future brings a differentiation between relatively wealthy peripheries in the rich countries (due to redistribution) and a "real periphery" in the rest of Europe.

It is clear that in the light of the previous observations various new maps of Europe can be envisaged. Illustrations of the broad spectrum of possibilities are: the "blue banana", the "green grape", the "red tulip", the "Europe an home with many appartments" or the "United States of Europe" (see also Nijkamp et al., 1992). Each of such maps has its limitations, but reveals also two important new features of the revitalising "old world":

- the increasing importance of metropolitan nodes in a European network economy
- the increasing importance of international network corridors.

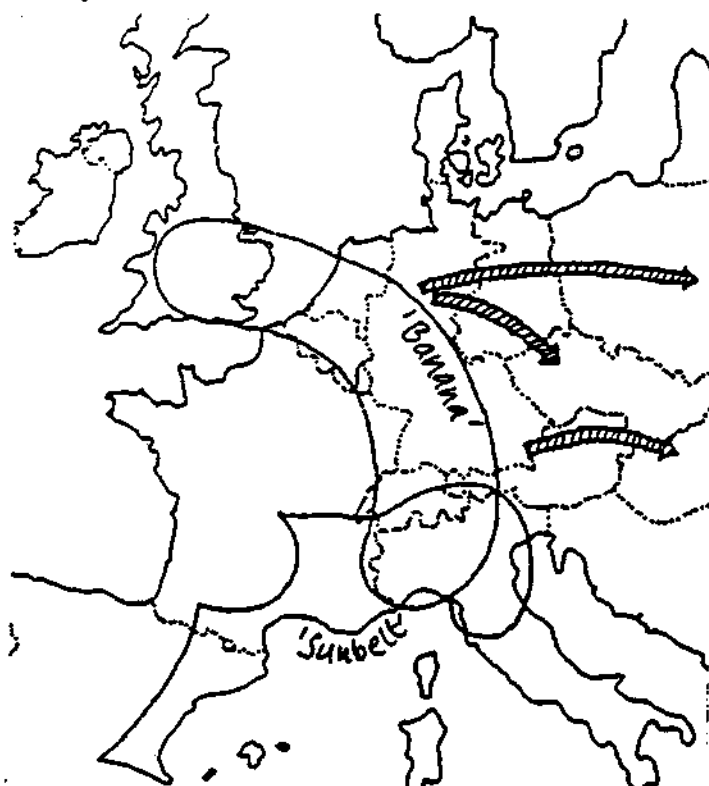


Figure 2. Gross National Product per Capita in Europe 1985



Source: Masser et al. 1990

Figure 3. The European "Banana"



Source: Masser et al. 1990

Figure 4 Main intra-European export relations in 1983

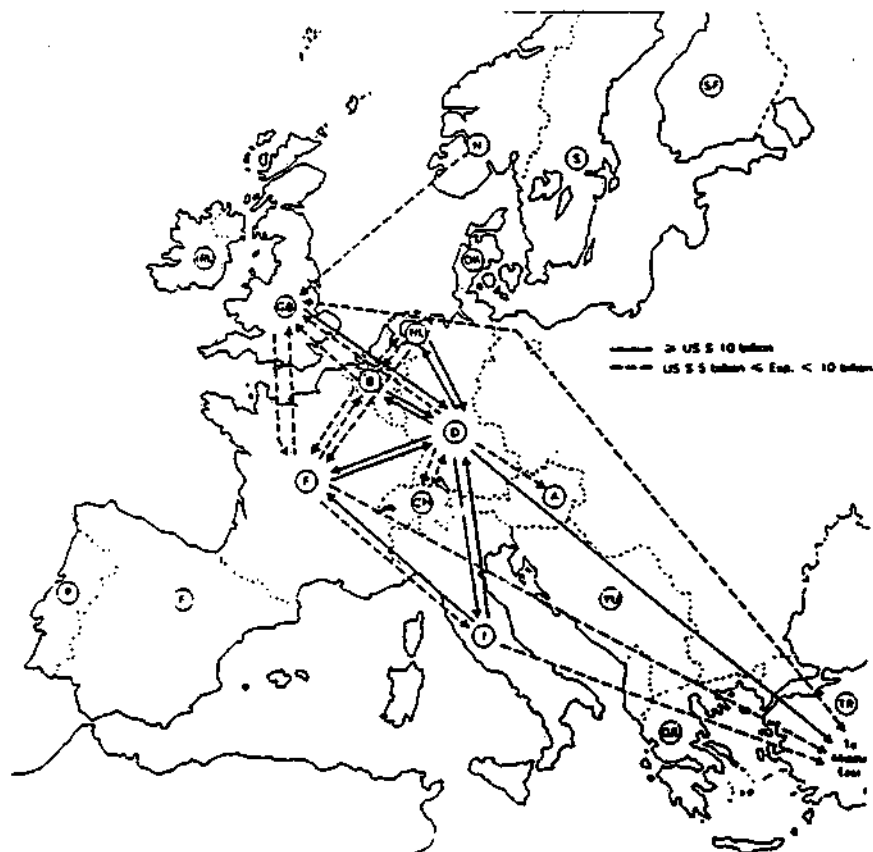


Figure 5. The European "Apartments"



The catalyst function of the transport and communication network and the fact that no stable causalities can be found is also closely linked to the politico-economic cycle in which the expansion of the infrastructure is embedded. The growing regions will express a strong demand for the expansion of investments that alleviate bottlenecks in infrastructure. If this demand is met by the political agencies this will allow a further growth of these areas. The question therefore arises, whether the missing networks might be used for regional policy goals. Two views can be taken. The first would be the Trans-European Networks approach of the EC (1989; see Figure 7). This would imply that the problem of the missing networks diagnosed above must be solved by a European effort to increase mobility and make the flows more efficient. This would allow for a considerable integration effect in Europe. It can be expected, much in parallel to the Williamson hypothesis, that in a first phase, it would be to the benefit of centres of the European network, with a formidable growth potential for Paris and even more so for Lille (see Figures 8-10). It is then expected that gradually this growth will then spread to the peripheral regions in the same way as it has done on a national level.

The opposite view would argue that the persistence of transport and communication bottlenecks together with the promotion of the relevant infrastructure in the lagging European regions would shift the future growth towards these regions. This is a problematic concept however, because it neglects the scale and scope effects, and the existence of agglomeration economies cited above. While it is true that the future growth of the European center critically depends on the solution of the missing networks problems, the persistence of this problem is not necessarily to the benefit of the lagging European Regions. Much more probably other growth centers in the world, like e.g. the Pacific rim, would take over.

But then the question is, what is the strategic potential of the missing networks problem in terms of regional policy. In different contexts, like the European high-speed railway network, the European motorway network and other issues, new East-West and North-South links are foreseen.

This leads to the question, whether the integration of new areas through the establishment of new links or networks can promote regional development (see also Maggi and Nijkamp, 1992). As has already been said, these networks have only a catalyst function. Hence the promotion of transport infrastructure does not by itself create

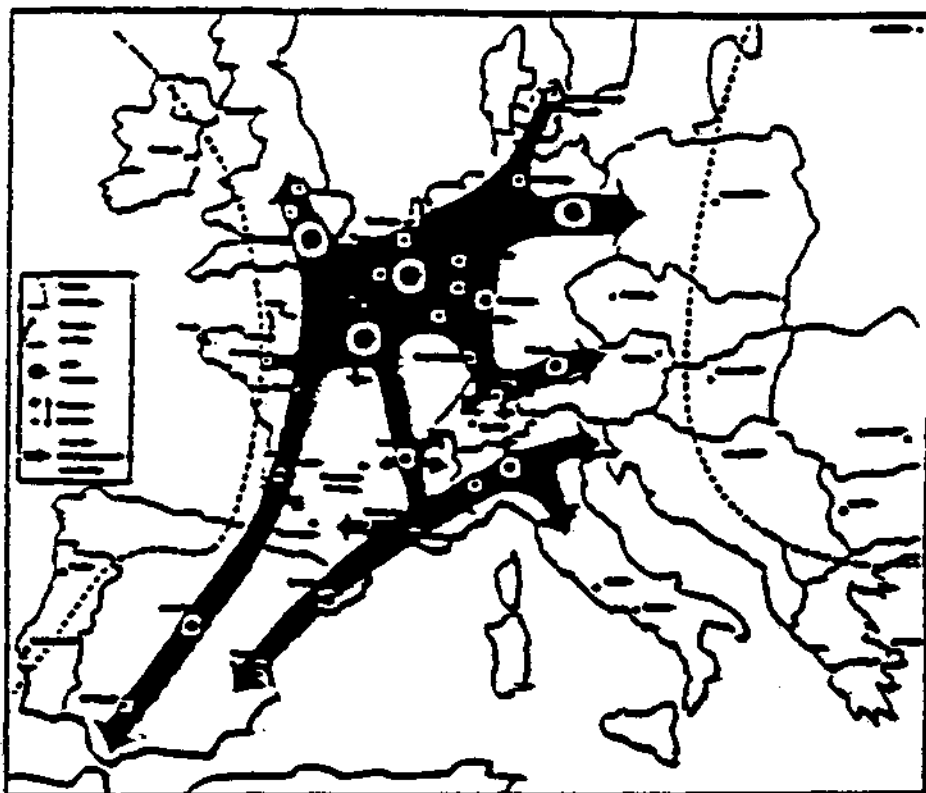
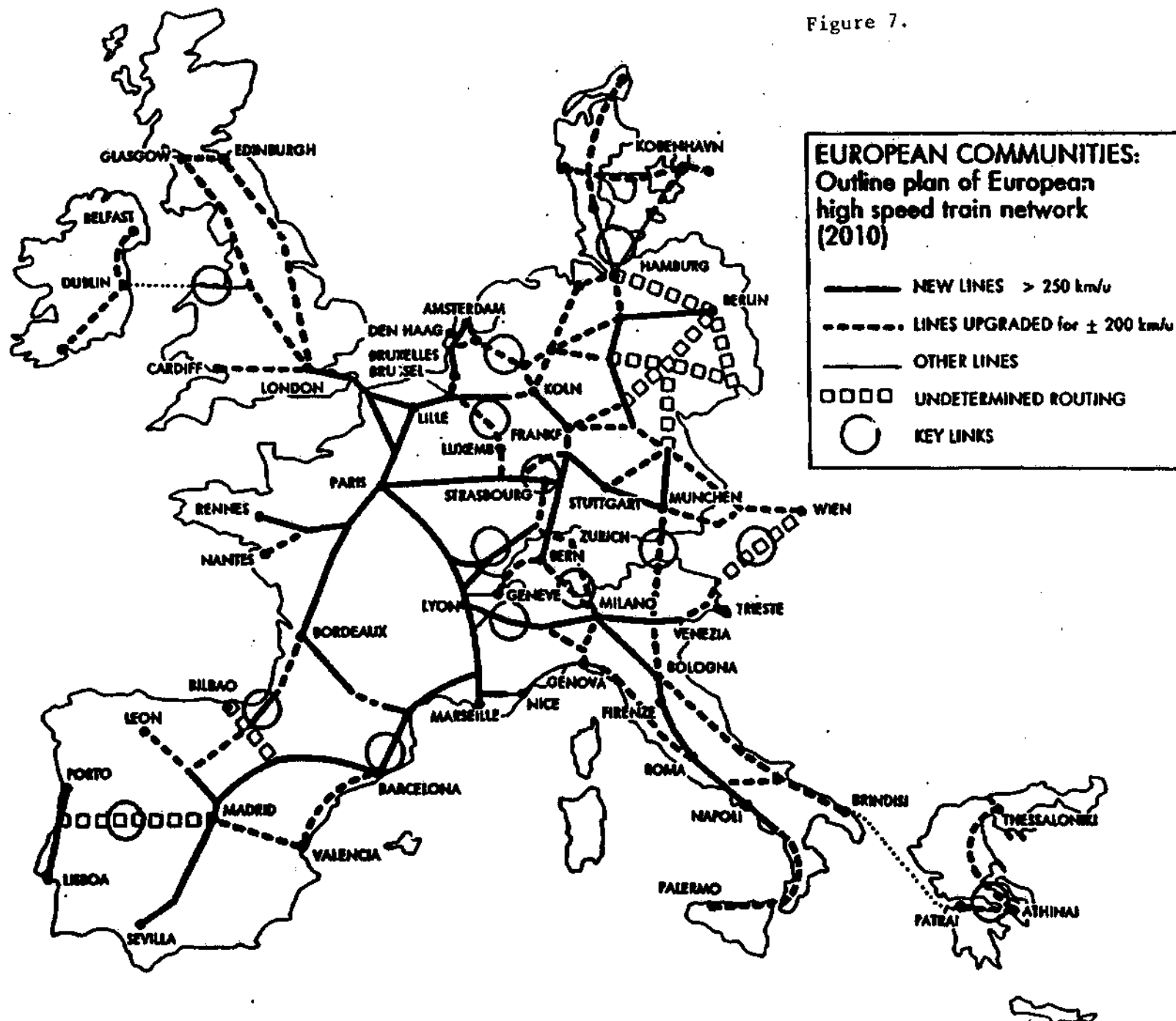


Figure 6. The 'Blue Star' of Europe

development. This means that the focus should not be on the new links in the first place, but rather on the new nodes. In other words, economic activities and transport and communication facilities should be promoted on a local and regional basis, i.e. bottom-up connectivity policy. Hence, solving the missing networks problem in the lagging regions should imply a regional policy which promotes infrastructure like freight terminals and logistic centers in relation with industry development. If only new links are established, without sufficient concern for the nodes, there is a risk that the lagging regions become pure transit areas. In this respect it is interesting to note that for the case of the sixties and seventies in Switzerland it was found (Kesselring et al., 1982) that the extension of the small scale regional transport network is positively related to regional development. Hence, the inclusion in the European networks should at least be accompanied by a development of the national and regional networks. Some concern for the local development is also indicated by the finding that, especially in countries with a federalist structure, local issues are often dominating in decisions on large scale transport infrastructure project (see Maggi, 1990). A good example is the local opposition against the TGV in Southern France, Belgium and the Netherlands.

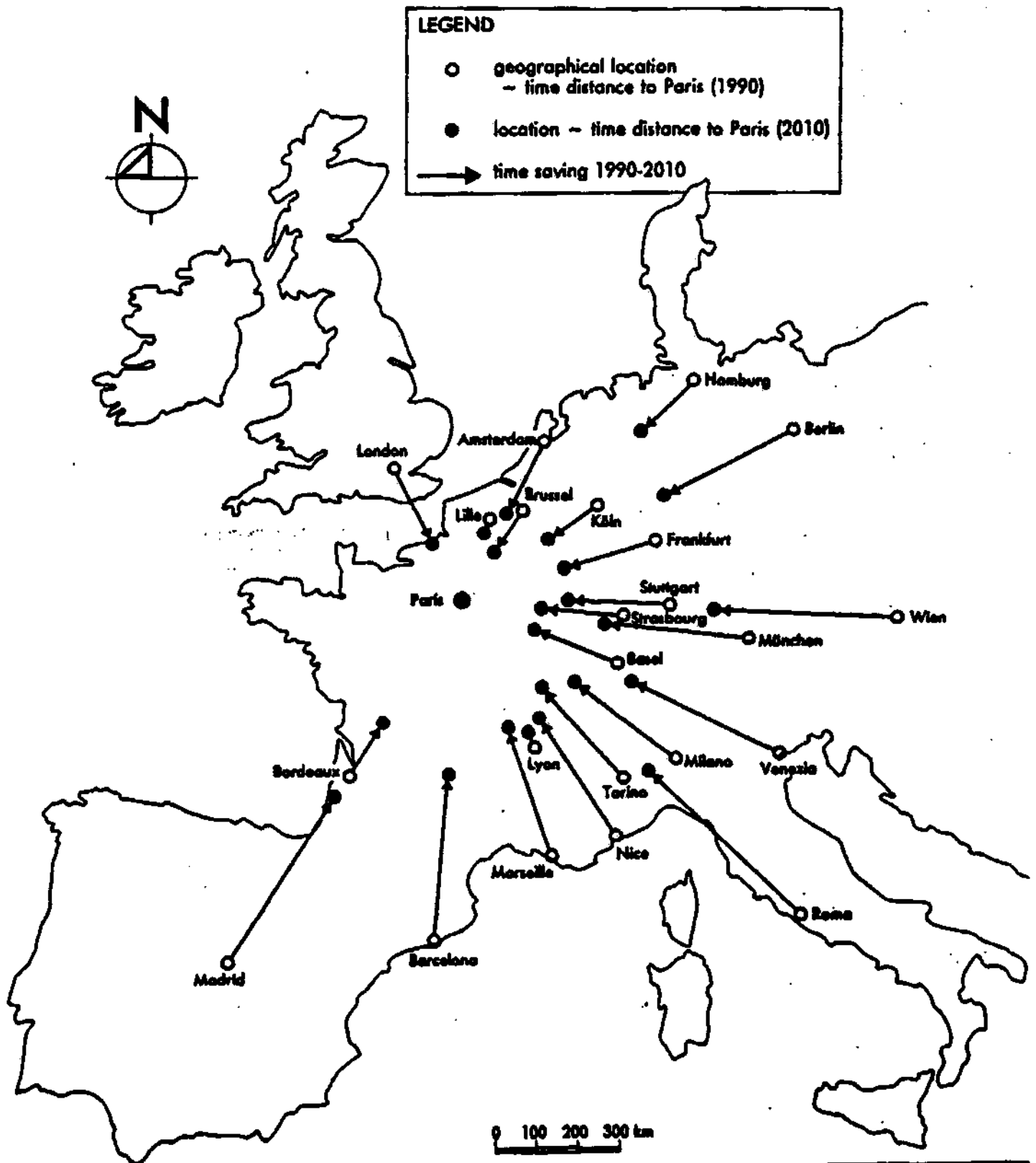
Such a strategy might eventually lead to a situation where peripheral regions in Europe can take over activities and functions from the congested centers. But in order to reach this stage, there is an evident need for coordinated policy concerning the missing networks.

Figure 7.



# EUROPE 'S GETTING SMALLER ALL THE TIME

## Relative shift in time distance by HST from/to Paris (1990-2010)



Source: Urbinno Research Network  
Map prepared by M+R - Brussels



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Figure 8

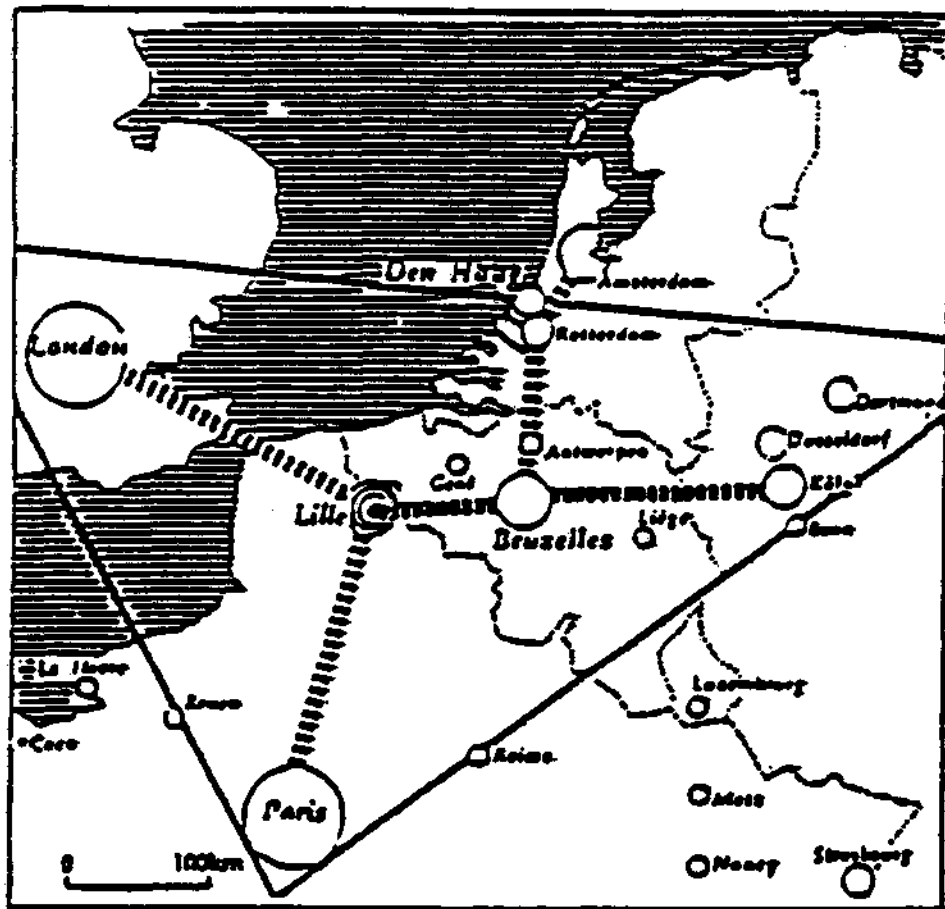
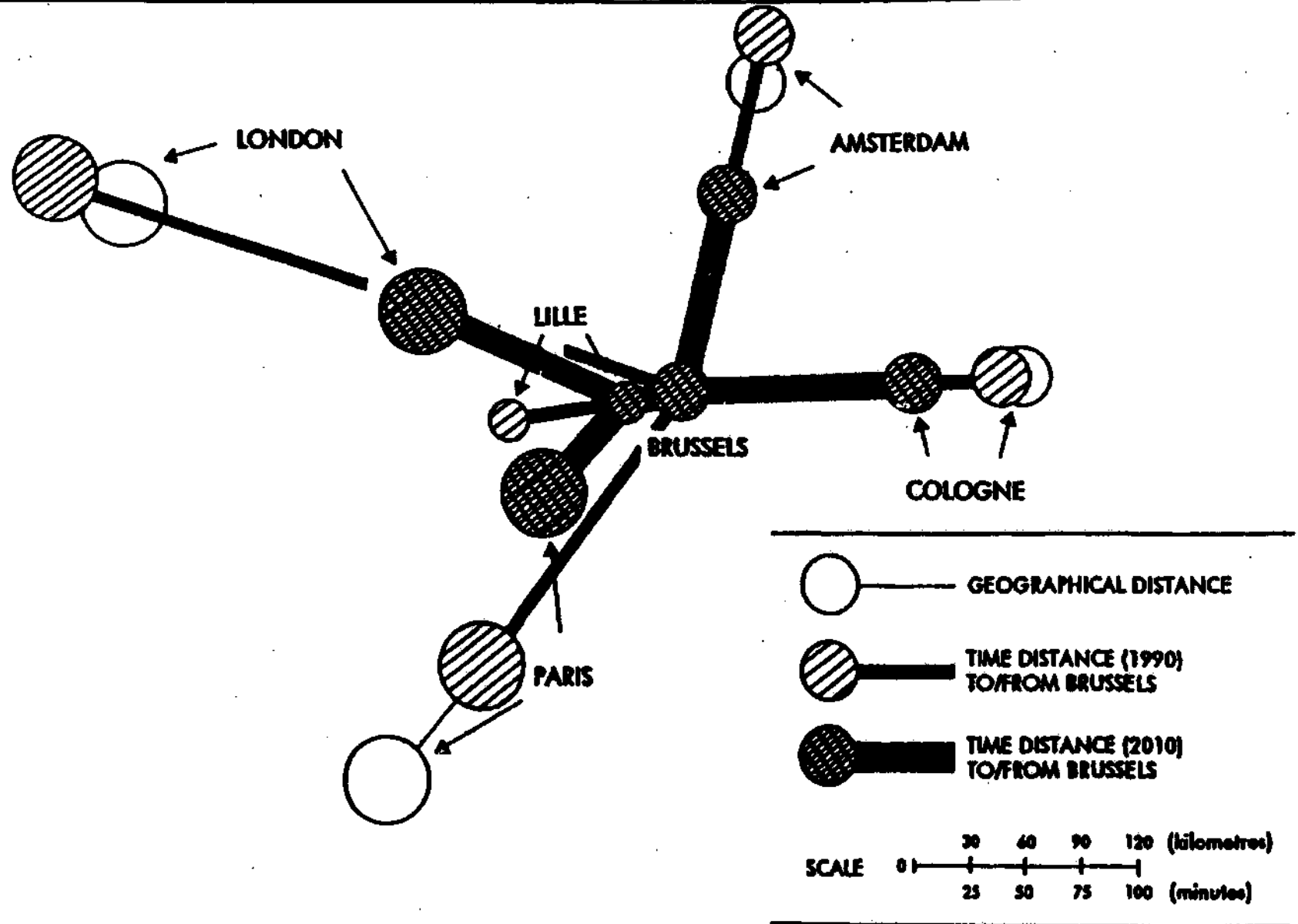


Figure 9. The Central Position of Lille

Figure 10. The New Metropolitan Map of Western Europe

# EUROPE 'S GETTING SMALLER ALL THE TIME

## EVOLUTION OF TRAVEL TIMES BY RAIL FROM/TO BRUSSELS, 1990-2010





## 5. Policy Issues

The lessons from the above observations and considerations are presented in the form of messages to policy-makers in Europe. The first message concerns the predominance of national perspectives in transportation and regional planning. Missing networks exist in Europe because transportation systems have been developed in segmented way, each country or region and each transport mode seeking for its own solution without considering the synergetic effects of coordinated design and the use of advance infrastructure. Because all economic development in space involves interacting networks, missing networks will sooner or later translate into missing economic development. Because of segmented national planning, there are European failures at the same time as national successes. New networks are created at the national level - the national rapid train systems are an excellent example - but the corresponding European network exists only as a fanciful map.

The second message is the importance of a European perspective in the analysis and resolution of transport and communication problems in Europe. This is not only a question of formulating a coordinated European policy but also points to the need for significant efforts towards standardisation. Lack of standardisation creates bottlenecks on all transport modes. These problems range from a lack of technical standardisation of cargo in combined transport on road and rail to problems with the width of canals and sluices on inland waterways. The greatest potential for standardisation is in rail transport (differences in gauges, voltages, frequencies and supply type, signalling systems and norms for using foreign traction on domestic rails as well as in free profiles and other things) and in telecommunications where the policies of the national PTT companies and developments in the NIT industries have led to the presence of an enormous variety of standards.

The third important message is the need for multi-modal solutions. Although there are many success stories concerning modal solutions at the national level, multi-modal approaches are rarely found and, if present, are only of minor importance in terms of market shares. Nevertheless, it can be argued that the huge demand for additional transport capacity in Europe can only be met if multi-modal solutions are pursued. This holds for passenger transport (e.g., rapid trains for medium distances combined with air traffic for long distances) as well as for goods transport (for example, combined transport on road and rail). A third message of this report therefore is that in looking for new network solutions, a multi-modal view is essential.

A fourth message is that future solutions are not to be sought primarily in new infrastructures, but in the more efficient use of existing networks. In the case of Eastern Europe this specifically relates to the rail mode and the inland waterways. There is some potential in this respect, if the intermodal possibilities are taken into consideration and if the necessary terminals and logistic nodes are planned. In the same time, the local and national networks - primarily road and rapid transit should be developed.

The final message states that if the above strategy is implemented on a European level, the ensuing integration effects will disperse to the respective regions in Europe according to a strong economic logic. While this is not the place to call for a strong industrial policy and a competition of regions in terms of regional subsidies, it seems reasonable to make a plea for a local and regional policy for the promotion of small scale networks. The degree to which regions will participate in the European growth will heavily depend on the integration of the regions in terms of efficient nodes in the

network and of a well performing local and regional transport and communication infrastructure.

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